

May 2017

# NSSC This Month

U.S. Army Garrison Natick Public Affairs Office



## Partnering with West Point

NSRDEC researchers and  
USMA cadets collaborate



NAGC

2016 National Association of  
Government Communicators  
First Place, External Newsletter





# Commander's Corner

Brig. Gen. Anthony W. Potts  
NSSC Senior Commander



# Table of Contents

May 2017

NSSC This Month

## A Busy Month ...

It's been a busy May at the Natick Soldier Systems Center.

It was an honor to host Gen. Gus Perna, the AMC commanding general, and Maj. Gen. Cedric Wins, the RDECOM commanding general and show them the great work being done for our Soldiers by Team Natick. I appreciate the efforts that went into making this a very successful visit and providing these Army senior leaders valuable information about what all of you do for our Soldiers.



Representatives from NSRDEC and USARIEM participated in Lab Day at the Pentagon this month. It was a great opportunity to show the Army senior leaders some of the important research performed in our labs, and it was a testament to the professionalism of our researchers.

I was honored to speak at the ROTC Commissioning Ceremonies at Tufts University on May 20 and Boston College on May 21. These young men and women raised their right hands and swore the time-honored oath to support and defend the Constitution of the United States of America. It is the same oath I took 31 years ago, when I received my commission at Murray State University. I hope that all of these new officers have outstanding careers serving our nation.

The unofficial beginning of summer is here. There will be an increased presence of children on the installation with the opening of the pool and the GEMS summer camps. Please follow the posted speed limits on post for the safety of everyone. Take the extra moment and look out for one another's health and safety. All of you play a vital role in the great work that Team Natick does on behalf of our Soldiers, and we need you to continue to fulfill that important mission.

Monday is the most solemn day of the year ... Memorial Day. Please take a moment to remember those who made the ultimate sacrifice in the defense of our nation. Also, remember the families who have lost loved ones.

Brig. Gen. Anthony W. Potts  
NSSC Senior Commander

# NSSC This Month

NSSC  
Senior Commander  
[Brig. Gen. Anthony W. Potts](#)

Garrison Commander  
[Lt. Col. Ryan Raymond](#)

Command Sergeant Major  
[Command Sgt. Maj. Michael R. Pintagro](#)

Public Affairs Officer  
[John Harlow](#)

Editor  
[Bob Reinert](#)

**About this newsletter**  
*NSSC This Month* is a monthly newsletter covering NSSC news within the Army and commercial media.

*NSSC This Month* is maintained by the USAG Natick Public Affairs Office.

To subscribe to *NSSC This Month*, please contact Bob Reinert at [robert.j.reinert.civ@mail.mil](mailto:robert.j.reinert.civ@mail.mil).

On the Web: [www.army.mil/natick](http://www.army.mil/natick)

Cover photo: Staff Sgt. Vito T. Bryant

Cover - p. 12



Photo: Staff Sgt. Vito T. Bryant

NSSC This Month	
<b>NSSC News Briefs.....</b>	<b>4</b>
<b>Focal Point.....</b>	<b>5</b>
<b>First Salute.....</b>	<b>6</b>
NSSC senior commander speaks at local ROTC commissioning ceremonies	
<b>Strength through diversity.....</b>	<b>8</b>
NSSC observes Asian American Pacific Islanders Heritage Month	
<b>Collecting E-waste.....</b>	<b>10</b>
NSSC employees can recycle old electronic gear	
<b>Partnering with West Point.....</b>	<b>12</b>
NSRDEC researchers and USMA cadets collaborate	
<b>Natick fosters women's leadership.....</b>	<b>15</b>
<b>Bar Exam.....</b>	<b>16</b>
USARIEM features nutritional supplement at DoD 'Lab Day'	
<b>Lighter Lid.....</b>	<b>18</b>
Soldiers to receive new combat helmet	
<b>D-Day.....</b>	<b>20</b>
June 6, 1944	





# NSSC News Briefs ...

## Ready and Resilient Workshop

The next Ready and Resilient Workshop will take place at Army Community Service in Room A-122 of Bldg. 1, from noon to 1 p.m. on May 30. The conversation will center around habits – good and bad – that influence how all our days unfold. There are three books for participants to choose from in preparation for the workshop: “Better Than Before,” “Declutter Your Mind,” and “Mindfulness.” Come by ACS to pick up a copy, or contact Kari Sharpe for more information at [katharine.m.sharpe.civ@mail.mil](mailto:katharine.m.sharpe.civ@mail.mil).

## Red Sox - Yankees

The Civilian Welfare Fund and Silver Fox Bus Lines will offer a trip to New York City on Saturday, Aug. 11 to see the Red Sox take on the Yankees at Yankee Stadium. The bus will depart NSSC at 7:30 a.m. and arrive an hour prior to the game for warm-ups, followed by the game. The bus should return to NSSC at approximately 8:30 p.m., depending on game completion time. Cost is \$115 per ticket, which will be on a first-come, first-serve basis. Tickets are non-refundable. Ticket deadline is July 11. Contact Duane Young at ext. 5609, or at [duane.l.young.civ@mail.mil](mailto:duane.l.young.civ@mail.mil). For further information, see our flyer at: [https://natiportal/cwf/Shared%20Documents/CWF Events/RedSox-Yankees2017.pdf](https://natiportal/cwf/Shared%20Documents/CWF%20Events/RedSox-Yankees2017.pdf).

## Newcomers' Orientation

An Installation Newcomers' Orientation will take place June 16 from 10 a.m. to 3:30 p.m. All newly assigned Soldiers and civilians are invited to attend. The orientation will begin at the Grant Conference Center (Bldg. 80) promptly at 10 a.m., and will include an NSSC walking tour and a stop for lunch (cash only) at the DFAC. The orientation will conclude at Lord Community Center. Contact Diane Magrane at [diane.k.magrane.civ@mail.mil](mailto:diane.k.magrane.civ@mail.mil).

## Come Boating or Fishing

The NSSC Beach at Lake Cochituate opened earlier this month and will be open regularly on Wednesdays until the end of the summer. Please adhere to the following procedures: Use of the NSSC Beach at Lake Cochituate must be coordinated in advance to facilitate access; for access during duty hours (9 a.m. to 3:30 p.m.), contact MWR at (508) 233-4791 to schedule and confirm arrangements; for access outside of duty hours and during weekends and holidays, contact DES at (508) 233-4201 to schedule and confirm arrangements. Accessibility to Lake Cochituate may change without notice due to weather, staffing or other conditions in Cochituate State Park.



## Garrison Spotlight

### David McCrillis

#### What David does:

“I inspect permanent and temporary buildings, processes, equipment systems, and other fire-related life safety situations.”

#### DES Director Jimmy Santoro on David:

“David McCrillis has been with NSSC since 1999 as a security guard, then as a police supervisor, and now as the fire safety inspector. As the fire safety inspector for the installation, David ensures fire protection programs and policies in Army regulations and the National Fire Protection Association codes are being maintained to keep everyone safe. Whether



it's conducting inspections, programming fire panels, reviewing contracts or educating the workforce on fire or safety hazards, David gives everything he has to make everyone safe and treats everyone on the installation as if they're part of his family. He is a great asset to the Directorate of Emergency Services.”

Photo: Bob Reinert, USAG Natick Public Affairs

## Join the CWF

The Civilian Welfare Fund is a group of volunteers from across the installation who meet on the second Wednesday of each month to plan and execute various activities on and off the installation for our NSSC workforce. We are currently looking for new members to be a part of our organization. If you are curious about what we do and might be interested in joining, feel free to attend any of our meetings. For more information, contact Duane Young, CWF chairperson, at [duane.l.young.civ@mail.mil](mailto:duane.l.young.civ@mail.mil).

## MWR Closure

The Lord Community Activities Center (Bldg. 32) is undergoing scheduled renovation work this spring and is expected to be closed through July 4. For more information, please contact MWR at ext. 4791.



## Focal Point



Top: Col. Charles H. May, military deputy, Natick Soldier Research, Development and Engineering Center, passes the guidon to Capt. Susan T. Mason, incoming detachment commander, Headquarters Research & Development Detachment, during a May 2 ceremony at Hunter Auditorium. Right, in support of the April 17 Boston Marathon, members of Boston Metro SWAT used the Natick Soldier Systems Center as a staging area.



Photos: David Kamm, NSRDEC Strategic Communications





# First Salute

## NSSC senior commander speaks at local ROTC commissioning ceremonies

By John Harlow, USAG Natick Public Affairs/NATICK, Mass. (May 23, 2017)

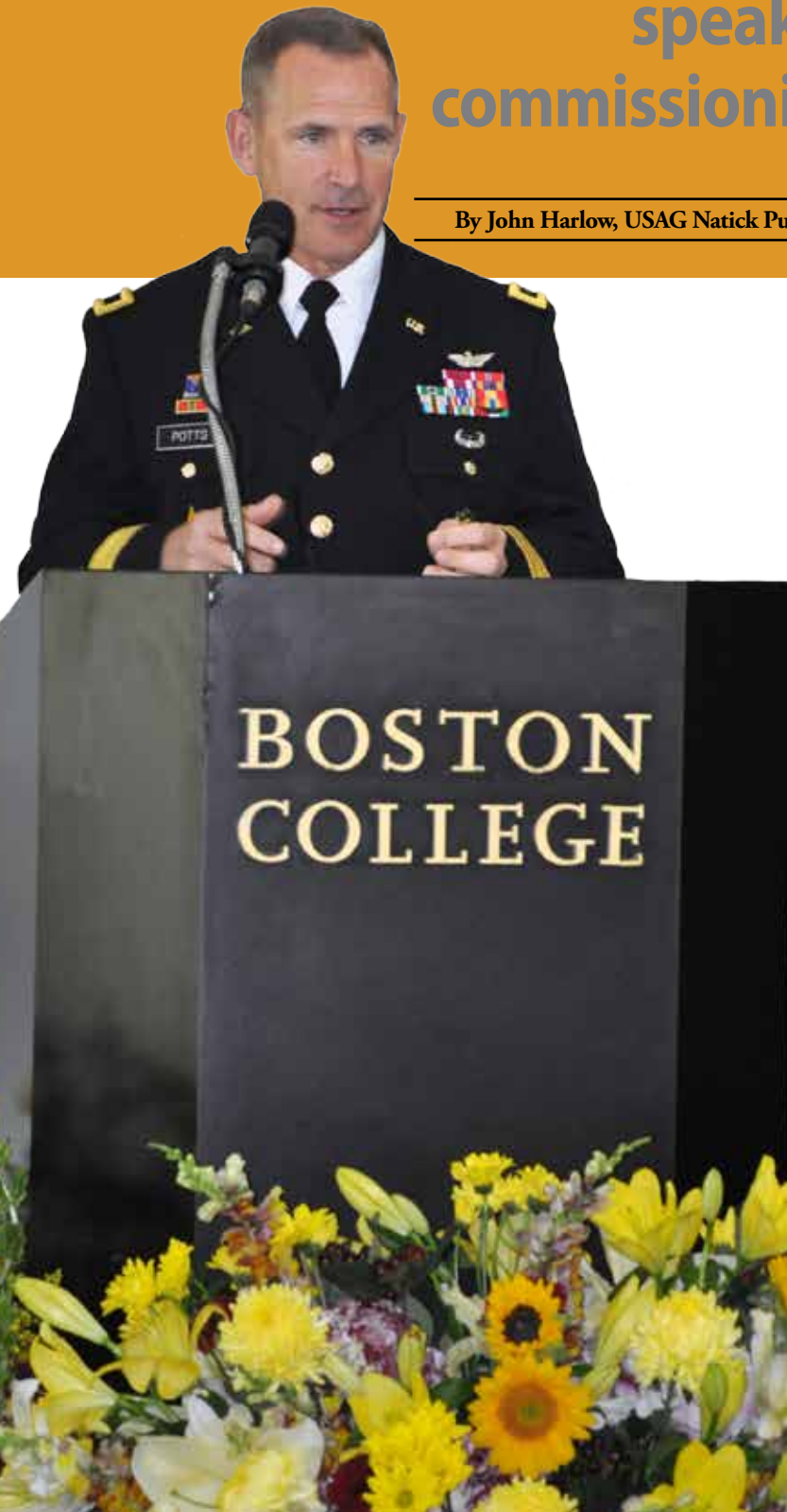


Photo: John Harlow, USAG Natick Public Affairs

It was more than 30 years ago at [Murray State University](#) when newly commissioned 2nd Lt. Anthony Potts received his first salute.

That salute came from his father, Wayne Potts, a senior noncommissioned officer in the U.S. Air Force. Now a brigadier general, the deputy commanding general of the [U.S. Army Research Development and Engineering Command](#) and senior commander of the [Natick Soldier Systems Center](#), Potts shared that story with the newly commissioned officers during the commissioning ceremony at [Boston College](#) on May 21.

The day before, Potts also had spoken at the [Tufts University](#) commissioning ceremony.

At Boston College, he addressed the Bandana Company, Liberty Battalion graduates. The graduates changed the company's Hollywood name in honor of 1999 BC graduate Welles Remy Crowther, who lost his life saving others in the World Trade Center on 9/11.

Potts thanked the families for the support they provided their sons and daughters as they chose to support and defend the Constitution of the United States against all enemies, foreign and domestic.

"This ceremony is about the families," said Potts. "We're going to honor the cadets today, but this ceremony is about those who supported you and got you here."

After joking that he couldn't remember the last time he was in the company of 14 lieutenants, Potts turned serious talking to them about their future path.

"You have chosen to join the profession of arms," Potts said. "Some of you were probably six years old when the United States was attacked on 9/11. You have lived in war your entire life and yet, you have freely chosen knowing that you will go into combat. You are about to join a team that is unlike anything we have in the entire rest of the world. Our Army, our military, are the guardians of freedom around this entire world. There are countries that would not know their freedoms today if it were not for young men and women like you who are willing to stand on that wall and say, 'Not on my watch.'"

He shared with the cadets five keys to success as a military officer.

- Lead by example.
- Be humble.
- Don't hesitate to make decisions.
- Be a team player and a team builder.
- Take your work seriously, but don't take yourself too seriously.

**"Every second, every minute, every hour of every day is a gift. You have chosen a path that will give you many opportunities to use those gifts to better yourselves, the Soldiers serving under you, and the nation you are defending."**

Brig. Gen. Anthony W. Potts, NSSC senior commander

Potts spoke of how special those who wear the uniform are.

"One-third of one percent of the population of the United States of America wears this uniform," Potts said. "It is because of who you are that allows us to take that small number and do such a magnificent job."

Military history at Boston College dates back to 1870. The ROTC program started in 1947 and continued until 1970, when it was suspended during the Vietnam War. The program was welcomed back on campus in 1984 as Bravo Company, Liberty Battalion in a partnership with [Northeastern University](#), and more than 1,700 officers entered service through the BC ROTC program.

Potts talked about the oath of office and this special moment that these young men and women will never forget.

"This is the same oath that I swore just over 30 years ago on the campus of Murray State University," said Potts. "Listen to the

oath when they take it. This is what makes us uniquely different as a military. They are not taking an oath to a country; they are not taking an oath to a person. They are not taking an Oath to a government. They are taking an oath to an idea. It is an oath to the idea of democracy. It is an oath to the ideas that are found in the Constitution of the United States of America.

"We are a microcosm of society. You truly will be judged and reach the heights that you can reach based on the expanse of your abilities and the constant of your character as you pledge to this idea of the Constitution."

Potts shared his family's military history with the cadets.

"My dad was in the military, my grandfather was in the military, and my son served some time in the military," said Potts. "When I did what you are about to do 30 years ago, I was surprised. My father had served 25 years in the Air Force as an enlisted Airman. My father was the first person to step out of rank, walk up and salute me. It is a day I will never forget, and you will never forget today. It is a special day."

In closing, Potts reminded the cadets that they control their own destiny.

"Every second, every minute, every hour of every day is a gift," said Potts. "You have chosen a path that will give you many opportunities to use those gifts to better yourselves, the Soldiers serving under you, and the nation you are defending."





# Strength through diversity

## NSSC observes Asian American Pacific Islanders Heritage Month

By Jane Benson, NSRDEC Public Affairs/NATICK, Mass. (May 11, 2017)

To commemorate Asian American Pacific Islander Heritage Month, the [Natick Soldier Research, Development and Engineering Center](#) hosted a special event in Hunter Auditorium on May 10. The event, which was open to all [Natick Soldier Systems Center](#) employees, included a dance performance, an esteemed guest speaker, and the recognition of the contributions of people of Asian American Pacific Islander heritage.

“Being half Japanese became part of who I am and part of the story that we all have,” said Jyujie D. Hewitt, (SES, retired), executive deputy to the commanding general, [U.S. Army Research, Development and Engineering Command](#), who was the event’s guest speaker. “All of us have a story. The reason why diversity is so important for the United States is because truly, biologically, systematically we’re stronger that way ... Diversity makes us a stronger nation.”

People of Asian American Pacific Islander heritage are a culturally and linguistically diverse group who have made invaluable contributions and who have made a positive and significant impact here at Natick and on the nation as a whole. The hour-long program provided just a small glimpse into the achievements, contributions and rich cultures of this diverse heritage.

“The NSRDEC workforce has a great collection of people with diverse heritages that make you feel very comfortable being part of the organization,” said Dr. Nagarajan Ramanathan, ST senior research scientist – Soldier Nanomaterials. “By working here you demonstrate every day that differences in heritage or diversity is a strength, and not a weakness, in carrying out in a unified way our mission to serve the Soldiers.”

Dr. Tom Yang, an NSRDEC food technologist, who was featured in the PBS program, “Nova: The Secret Life of Scientists and Engineers” (<http://www.pbs.org/wgbh/nova/blogs/secretlife/engineering/tom-yang/>), embodies the sentiments expressed by Ramanathan.

“I grew up in Taiwan, which is a resourceless, developing country,” said Yang. “People were happy, though, because they appreciated whatever Mother Nature and Father Earth gave them, and they were hungry for any novel items from abroad to make their life easier. I luckily inherited this open-minded attitude and have resisted a ‘not-invented-here’ mentality that I have applied to my work as a food technologist to explore unconventional items or technologies to improve the military ration system.”

Just a few successful examples of the technologies that Yang has explored include a microwave-assisted thermal sterilization from Belgium, a vacuum microwave drying method from Canada, and a novel meat snack processing technology from France.

“I really appreciate this global spectrum that gives me a lot of freedom to explore and apply technologies to better serve our brave Soldiers,” said Yang. “My Asian heritage of respect, discipline and loyalty trained me to be a well-respected scientist at Natick and makes me proud to be one of the members of this great organization.”

Mary Giacalone, an NSRDEC program analyst and chair of the Asian American Pacific Islander Heritage Month Committee, believes strongly in the importance of special program observance events and hopes more members of the workforce get involved with future event committees.

“Special Emphasis Programs Observances are important because they raise employee awareness of the diversity of cultures in the workplace and showcase how these cultures have contributed to making America great,” said Giacalone. “I was amazed at the similarities amongst Asian cultures within the NSSC, particularly in their family and workplace values and unwavering commitment to directly support the warfighter.”

Quoc Truong, an esteemed NSRDEC physical scientist, came to the United States from Vietnam when he was 15 years old.

“My heritage represents the refined, positive cultural upbringing, family values, beliefs, traditions, practices and customs my parents instilled in me and that their parents instilled in them – and that I am hopefully passing down to my children throughout their lifetime,” said Truong.

For the past 33 years, Truong, who is grateful to Warfighters for protecting our freedom, has dedicated his career to creating and developing new technologies to protect Soldiers and improve their quality of life.

“I feel most grateful and fortunate to be a Natick employee,” said Truong. “The respectful, friendly, conducive and supporting environment has helped me to flourish professionally at Natick Labs, where my ideas are formed, researched, developed and transitioned to benefit and protect our Soldiers.”

The program concluded with a performance of the Chinese lion dance by the [Wah Lum Kung Fu & Tai Chi Academy Performance Team](#). The Chinese lion dance ceremony dates back more than 1,000 years, and it is believed to bring good luck, good fortune, happiness, success and prosperity.

*The NSSC program concluded with a performance of the Chinese lion dance by the Wah Lum Kung Fu & Tai Chi Academy Performance Team. The Chinese lion dance ceremony dates back more than 1,000 years.*

Photos: David Kann, NSRDEC Strategic Communications





# Collecting E-waste

## NSSC employees can recycle old electronic gear

By Tazanyia Mouton, USAG Natick Public Affairs/NATICK, Mass. (May 12, 2017)

According to the [Environmental Protection Agency](#), electronic waste, or e-waste, is the fastest growing municipal waste stream in America, with only 13 percent being recycled.

For the third year, the [Natick Soldier Systems Center](#) welcomes the entire workforce to discard any unwanted e-waste from home during this free event, which is sponsored by the [Federal Bureau of Prisons' UNICOR](#). Disposal of government equipment or hand-receipted items is strictly prohibited.

Collection boxes will be placed outside Bldg. 93, adjacent to the basketball courts, June 6-8 from 7 a.m. to 3:30 p.m., and all collected items will be recycled, repurposed or disposed of.

"If we can reduce the waste going into our landfills, as small as it may be, that builds up," said Rich Valcourt, an environmental engineer with [U.S. Army Garrison Natick](#).

"How many people live in your town? Imagine if everybody threw out a TV, a

microwave, a few cell phones, a couple portable radios. You get the idea that it starts adding up," said Valcourt. "This is just our way of doing our part and being good stewards to the environment."

Valcourt mentioned that during the two events Natick has hosted, about 100 employees have participated and have generated about 10 tons of e-waste.

If participants are worried about their personally identifiable information being exposed, Valcourt said there's no need to feel uneasy.

"We can take a sledge hammer to it, especially on cell phones, just for peace of mind," said Valcourt. "Turn in your computer, and if you want, you can also take your hard drive out, just to feel comfortable."

Valcourt said he absolutely thinks it is worth it to hold the event each year.

"When I show people pictures, it blows them away," said Valcourt. "They come in with a tractor trailer, we load it for them, and we'll fill it."

In Massachusetts, people generally have to pay to dispose of e-waste, Valcourt said, but this is a chance for the workforce to lighten their waste at home while not lightening their wallets.

The following e-waste items will be accepted at the collection event: TVs, computers, laptops, cell phones, printers/scanners, monitors, modems, disk drives, personal computer peripherals, fax machines, shredders, power strips, calculators, cameras, radios, cable boxes, DVRs, VCRs, WebTVs, MP3s, gaming consoles, cables, wires, electric cords, scrap copper, scrap computer metal/plastic, copiers, hard/floppy drives, motherboards, microscopes, bar coding equipment, connectors/cords/wires, circuit boards, network and video sound cards, tape drives, microfiche readers, CD-ROM drives, telescopes, and audio/visual equipment.

If you have any questions about whether your items will be accepted, contact Rich Valcourt at ext. 5582.

Recycling  
1  
million



=

Savings of enough energy to power 3,500 U.S. homes for a year.



=

Recovers 35,000 lbs. of copper, 772 lbs. of silver, 75 lbs. of gold and 33 lbs. of palladium.

Source: Environmental Protection Agency





# Partnering with West Point



## NSRDEC researchers and USMA cadets collaborate

By Jane Benson, NSRDEC Public Affairs/NATICK, Mass. (May 24, 2017)

Photo: Staff Sgt. Vito T. Bryant

Henry Girolamo recognizes that experience combined with fresh thinking can result in great innovation.

Girolamo is the lead, Emerging Concepts & Technologies, Warfighter Directorate, at the [Natick Soldier Research, Development and Engineering Center](#), and he is the driving force behind the partnership between the NSRDEC and the [United States Military Academy at West Point](#). He developed and implemented the collaboration, serves as the NSRDEC point of contact, and continues to manage the effort, which was formalized in 2014 under a Memorandum of Understanding, or MOU.

Through the collaboration, NSRDEC subject matter experts provide expertise and constructive guidance to USMA cadet teams on optimal research approaches that maximize beneficial technology solutions for Soldiers. Girolamo believes the research conducted at USMA complements NSRDEC research and may result in beneficial and innovative improvements to NSRDEC products.

“The collaboration provides real-world Soldier problems for the cadets to solve as the foundation of their capstone projects,” said Girolamo. “The research collaboration provides cadets with an opportunity to work with Army subject matter expert scientists and engineers, to cooperatively research topic areas of mutual interest and importance to NSRDEC and the Army. The cadets receive regular guidance and constructive comments from the scientists where they learn to process the information and turn it into Soldier solutions that are being worked into Soldier products. It’s a mutually beneficial win-win for USMA West Point and NSRDEC.”

Recently, USMA cadets, along with members of the USMA faculty, visited NSRDEC to present their projects that were developed with NSRDEC sponsors.

Girolamo commended NSRDEC Director Douglas Tamilio for providing support for these projects from the top down.

Some of the student projects included the Torso-Borne Load Redistribution, a project focusing on the redistribution of load carriage weight from the shoulders to the torso to reduce weight on the spine; Tunnel ISR, a project to develop a robotic platform for a rapid reconnaissance system that can be used in tunnels; Female Helmet Fit, a project focusing on improving helmet fit for females based on female shape and hair styles; Aircrew Restraint, a project to develop an adjustable safety restraint tether for use by military aircrews; Aerial Delivery Enhanced Speedbag, a project to modify an existing system to incorporate Soldier-driven improvements; M249 Buttstock Interface, a project working to make the automatic weapon more compatible with body armor systems; and SIP (Structured Insulated Panel) Hut, a project aimed at addressing new approaches to incorporating human factors in shelter design.

Girolamo coordinated the presentation event along with Lt. Col. Brian Novoselich, director of the [Center for Innovation and Engineering](#) at USMA.

Novoselich thanked NSRDEC for the opportunity for the cadets to present this year, and he thanked NSRDEC sponsors for the educational and design opportunities they gave the cadets.

**“It’s very important to work with the cadets as they represent the future Army leaders and their experience with NSRDEC will stay with them throughout their career.”**

Melvin Jee, NSRDEC team leader

“They looked at some tough Army problems this year,” said Novoselich. “Thank you for being so engaged and giving the cadets some unique design experiences.”

The exchange between sponsors and cadets is beneficial for both parties.

“It’s very important to work with the cadets as they represent the future Army leaders and their experience with NSRDEC will stay with them throughout their career,” said Melvin Jee, an NSRDEC team leader.

“This is why I try to make their experience as positive as possible. Additionally, the shelter concepts they work on may eventually make it to the field and they would be able to point to it and say, ‘I helped in the design of that shelter.’”

“It’s very rewarding to engage and support USMA cadets on capstone projects,” said Richard Benney, director of NSRDEC’s Aerial Delivery Directorate. “I have found every cadet I’ve interacted with over the years extremely motivated and dedicated to improving Army capabilities. These interactions also expose them to RDEC activities and some of the challenges of acquisition early in their careers. Team Rapid Resupply included two cadets who are planning to be helicopter pilots and who will likely use a future version of

the Enhanced Speed Bag System, or ESBS, to deliver critical supplies to infantry Soldiers on the ground. A third cadet on the ESBS project is going infantry and will likely be a recipient of ESBS at some point in the future. Their passion to improve the ESBS was clear during all interactions, and I hope to remain in contact with them as they progress in their careers.”

“The collaboration between USMA and NSRDEC anthro-

pology team and the mentoring of USMA cadets is important for highlighting the critical nature for understanding the relationship between Soldier body size and shape and the optimal fit of clothing and individual equipment to improve safety and performance,” said Dr. Todd Garlie, an NSRDEC research anthropologist who advised students on the female helmet fit project.

“There are many benefits for NSRDEC,” said Girolamo. “In several instances, NSRDEC does not have the human resources to execute the research we are asking the cadets to do; some of the research NSRDEC requests being made of cadets are in areas of exploration we have never covered before, such as new ways to integrate body armor weight on Soldiers, or develop a rigid wall shelter that can be assembled anywhere in the world in a few hours with just a few Soldiers and an aerial delivery product, the Speed Bag, that can accurately deliver more than 300 pounds of supplies to Soldiers on the ground from a high-speed low-altitude aircraft. These are just a few examples.”

“Providing the opportunity for cadets to explore the ideas they are learning in the classroom and see them applied is immensely beneficial,” said Brig. Gen. Cindy Jebb, dean of the academic board at USMA, West Point. “Working with researchers who are looking at these problems on a daily basis and learning from their expertise





USMA Cadet Troy Amnott describes a body armor-buttstock interface during a presentation at Natick Soldier Systems Center.

Photo: David Kamm, NSRDEC Strategic Communications

enables cadets to see where theory and practice intersect and where there are gaps. This is powerful and essential for the education and leadership development of cadets.”

“What I think is most rewarding is working with NSRDEC colleagues and USMA faculty to design topics that are matched with the academic credentials of the cadets,” said Girolamo. “We want to set them up for success, but want research that is challenging.”

Following the event at NSRDEC, the USMA cadets participated in the Soldier Design Competition at the [Institute for Soldier Nanotechnologies](#) in Cambridge, Massachusetts. The competition engages students from the Massachusetts Institute of Technology and cadets from USMA in the activities of the institute.

Both Jebb and Tamilio also served among the judges at this year’s Soldier Design Competition.

“It is a great opportunity for cadets to engage and learn from other participants,” said Jebb. “Of course, friendly competition always elevates our game as it gives cadets the chance to test out their projects against the projects of others.”

“It was amazing to see how both the cadets and the MIT students worked to solve significant real-world Army problems,” said Tamilio. “Their work could potentially have long-lasting effects on our Army.”

In addition to the competition at the institute, the potential to solve real-world problems was also part of USMA Project Presentation Day at NSRDEC. Girolamo pointed out how the USMA Project Presentation Day and how the research collaboration between USMA and NSRDEC ultimately benefits the warfighter.

“Products that are developed under capstone projects are innovations that have out-of-the-box thinking, done by young Soldiers, the cadets, that don’t know what has been tried before, and therefore, they have no constraints in trying new ideas that perhaps are surprisingly workable solutions to scientists and engineers that may not have tried because of risk,” said Girolamo. “But as the collaboration projects become refined products, these will make it into the Army and be used by Soldiers.”

The collaboration not only builds projects and products, it helps to cultivate future leaders.

“The best thing is seeing cadets pursue their passions,” said Jebb. “This kind of intellectual activity will pay dividends in their own leader development as they think through, adapt, and anticipate challenges and opportunities. They also gain experience collaborating and forming partnerships, which will set them up for success as Army leaders who, along with others, will defend our Republic.”



Photo: Jeff Sista, NSRDEC Public Affairs

## Natick fosters women’s leadership

By Jane Benson, NSRDEC Public Affairs/NATICK, Mass. (May 11, 2017)

The [Natick Soldier Research, Development and Engineering Center](#) is not only looking for women leaders but hoping to help create and cultivate them.

Three NSRDEC employees, led by Andrea St. George, an organizational development specialist and leadership development program manager at NSRDEC, are hoping to revitalize a women’s leadership program that began in 2008.

Sandi Hickey, NSRDEC’s senior intelligence officer and Jen Rego, a research chemist working in the Office of the Chief Scientist, are working with St. George.

St. George said the group is dedicated to building a “supportive community of professional women” who are devoted to “career development and professional/personal empowerment.”

“Our goal is to create a community where thoughts, goals and ideas can be shared in a supportive environment – no matter what the topic may be,” said Hickey.

The group wants to establish meetings and activities that will benefit employees by “bringing motivated people together to explore leadership topics, network together and brainstorm ideas for growth, development, connection and support to help employees feel connected to the greater community,” said St. George.

The very first meeting was held in early May during lunchtime.

“There was much discussion regarding ‘leadership,’” said Hickey. “It seemed as though many in the room equated leadership as only referring to their jobs, positions or career fields. Our thought behind leadership was more than that – we were focusing on personal leadership, as well as professional. We envisioned this group as

one for personnel of all levels; we are all leaders in some way – of ourselves, our families, as well as our careers.”

The initial meeting was attended by between 35 to 40 Natick employees.

“That’s a lot of talent in one room, and there is so much we can learn from each other,” said St. George.

“There was such a great turnout at the info session, and I am excited to see how the group progresses from here,” said Rego, who is relatively new to NSRDEC. “I think the opportunity to meet and learn from other women in the organization is incredibly valuable.”

St. George said that the group will be hosting a variety of formal and informal events. Formal events may include watching women’s leadership-related [TED talks](#), followed by group discussions and brainstorming. Informal events may include hiking, book clubs and other activities. Feedback from attendees will shape the activities and topics of future meetings.

“I think these meetings will benefit the workforce by providing a networking opportunity through a positive, supportive community where perspectives and ideas can be openly shared so that others can learn from shared experiences and feel empowered to take actions in their own life,” said Rego.

“Leadership development is ongoing and can happen in many forms,” said St. George. “I think that by realizing that you are in charge of your own growth and development – personally and professionally – you can start to make decisions about how you spend your time developing the skills you want to work on. Having a support system in place to network, share ideas and encourage one another will help us all grow as leaders. I’m excited to see the group grow and evolve.”





# Bar Exam

## USARIEM features nutritional supplement at DoD 'Lab Day'

By Mallory Roussel, USARIEM Public Affairs/WASHINGTON (May 22, 2017)



USARIEM

A broad audience ranging from high school students and military cadets to general officers and government Senior Executive Service had an opportunity during the Department of Defense, or DoD, Lab Day at the Pentagon on May 18 to learn about the science behind the Performance Readiness Bar, a calcium and vitamin D-fortified snack bar developed to optimize bone health in basic trainees.

Use of the snack bar is slated to begin at [Fort Benning](#), Georgia, this summer and will be fully implemented at all four Army basic training locations in 2018.

Among the flurry of white tents lining the Pentagon, showcasing the Army's most advanced research, development and technology, Drs. James McClung and Erin Gaffney-Stomberg, two researchers from the [U.S. Army Research Institute of Environmental Medicine](#), or USARIEM, offered samples of the snack bar to interested visitors while discussing the research utilized to guide the development of the product.

"USARIEM has been researching the requirements for calcium and vitamin D intake during Initial Military Training, or IMT, in order to optimize the bones' anabolic response to training, as stronger bones are more resistant to stress fractures," said Gaffney-Stomberg, a research physiologist from USARIEM's [Military Performance Division](#). "Our findings indicate that calcium and vitamin D requirements during IMT are higher than other times in order to support bone health."

Here's the scary truth: According to the [Military Health System](#), recruits often arrive to basic training with poor calcium and vitamin D status, making their bones more vulnerable to stress fractures and other injuries.

"Because the U.S. population at large is generally less fit, many of the new Army recruits are not physically and physiologically ready to endure the rigors of Army IMT," said Dr. Stephen Muza, deputy director of Science and Technology at USARIEM. "Consequently, many well-educated and motivated recruits suffer skeletal injuries that can lead to their medical disqualification from military duty. The Performance Readiness Bar is one elegant solution to this problem that will reduce attrition and personnel costs associated with IMT. This will lead to increased Army readiness."

Gaffney-Stomberg added that "99 percent of the body's calcium is stored in the skeleton, and vitamin D helps the body absorb calcium and strengthen bones." Performing high physical activity while these nutrient levels are low starts to cause problems.

"When you do not get enough calcium in your diet, your body will mine calcium out of your bones to support vital functions like muscle contraction and nerve conduction, at the expense of your skeleton," Gaffney-Stomberg said. "Over time, this will weaken bone, making it more susceptible to fracture."

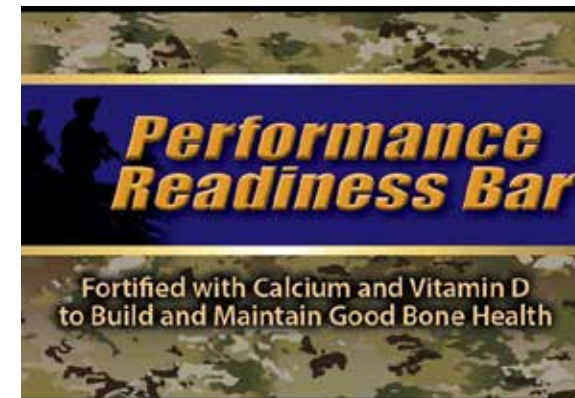
The percent of recruits who experience stress fractures is even scarier.

"Stress fractures occur after unaccustomed activities or overuse, such as carrying heavy loads – common during basic training," said McClung, deputy chief of USARIEM's [Military Nutrition Division](#). "Up to 20 percent of female recruits and five percent of male recruits suffer from stress fractures during IMT. Women beginning training with poor vitamin D status are particularly vulnerable."

These injuries can impact Soldier readiness, resulting in up to 60 percent of those suffering from stress fractures to drop out of the military.

Years of nutrition research and field studies by USARIEM scientists have demonstrated that higher levels of calcium and vitamin D in the body increases bone density in response to training. Eating the calcium and vitamin D-fortified Performance Readiness Bar supports a recruit's bone health and reduces injury risk.

"Our test Soldiers ate these bars each evening," McClung said. "We observed marked improvements in their nutritional status and bone health. An added benefit may be better performance during physical training before the next morning's breakfast."



This year, the Pentagon featured approximately 90 displays from research and development labs throughout the DoD. Experts from the Army, Navy and Air Force demonstrated their high-tech tools, medical advancements and programs to hundreds of visitors, including numerous congressional and DoD leaders, as well as students and Pentagon employees.

USARIEM was among 14 joint medical exhibits displaying products and research to demonstrate how these DoD medical labs support military personnel during training and on the battlefield.

Exhibit highlights included medical training programs, combat feeding research, trauma care and battlefield medicine breakthroughs, traumatic brain injury research, DoD Zika response efforts, biological defense research, and bone health optimization products.

The annual DoD Lab Days showcase relevant military research that is critical to the health and well-being of the nation's warfighter. For Muza, these Lab Days spotlight the unique and critical research capabilities and solutions Army medical labs, including USARIEM, provide to reduce injury rates and optimize servicemen's and servicewomen's health and performance.

"Being a warfighter is a unique occupation with very limited civilian counterparts," Muza said. "To effectively and efficiently provide the warfighter with the methods and means to optimize and sustain their health and performance requires a research and development community that understands warfighters' operational environment. USARIEM has a highly educated and innovative science and technology staff with the knowledge and experience to provide preventative medicine products customized to the warfighter's requirements."



# Lighter Lid

## Soldiers to receive new combat helmet

By Gary Sheftick, Army News Service/WASHINGTON

The Army awarded a contract for a helmet that weighs an average of 22 percent less than the one currently in use but provides just as much protection, according to officials.

The [Advanced Combat Helmet](#) Generation II contract was awarded to [Revision Military](#) in Vermont to produce up to \$98 million in helmets over the next five years. The contract was mentioned at the [Senate Armed Services Committee](#), subcommittee on airland, during a hearing about Army modernization.

Brig. Gen. Robert L. Marion, deputy of acquisition and systems management for the [Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology](#), told senators the helmet and other lightweight body armor items now being developed are among the Army's most promising new technologies.

The new helmet is made from ultra-high-molecular-weight polyethylene, a lighter material than Kevlar, but reportedly just as strong. It can stop 9 mm handgun rounds, officials said, along with various shell fragments.

Collaboration with industry, academia and government research laboratories enabled the weight reduction without compromising integrity, according to [Program Executive Office Soldier](#) at Fort Belvoir, Virginia.

"The partnership between the Army and industry is critical," said Lt. Col. Kathy M. Brown, product manager for Soldier protective equipment. "With a renewed focus on research and development, our goal is a revolutionary leap in technology for personal protective equipment in the future."

The weight difference between the new ACH Gen II and the current helmet depends on the size, explained another PEO Soldier official. In the most common size of the helmet, a large, the ACH Gen II will weigh just under 2.5 pounds, about 12 ounces less than the current large ACH.

The most weight reduction will be in the extra-large helmet, officials pointed out. That size will see a reduction of nearly a pound.

The helmet weight reduction will help Soldiers reduce mission fatigue and enhance their situational awareness, according to PEO Soldier officials. They believe the lighter helmet will increase Soldier effectiveness and overall survivability.

The new helmet will also be available to other military services through [Defense Logistics Agency Troop Support](#), just like the current ACH.

"The procurement of the ACH GEN II is the result of the Army's modernization program to meet one of the Army's top priorities – lightening the Soldier's load," Brown said.

### LIGHTENING THE LOAD

Heavy, bulky body armor has been a problem for many years, said Lt. Gen. Joseph Anderson, the Army's deputy chief of staff, G-3/5/7, who also testified at the hearing.

"We went into Iraq back in 2003 and all this stuff started getting added to us like a Christmas tree: side plates, groin plates, neck plates," Anderson said, adding that all the protective equipment weighed Soldiers down and caused them to move almost "like robots."

The new integrated head, neck and face protection that is now being developed is promising, though, Anderson said.

The Integrated Head Protection System will include an enhanced helmet, a visor, a mandible that protects the lower jaw, and a "ballistic applique" that can be attached over the base helmet. The complete ensemble is scheduled to be fielded in 2020.

In the meantime, though, body armor is already being fielded to better fit women and smaller Soldiers, Marion told lawmakers. Body armor is now being customized to fit the smallest stature Soldier to the biggest, he said.

"What we've been able to find through testing recently is that we have the same level or greater protection for up to 26 percent less weight," Marion said of body armor being engineered at the Army's [Natick Lab](#) in Massachusetts.

"And that's weight that we can't off-board to a mule or some-

thing else," Marion said, referring to the SMET mule – the squad mission equipment transport – which is a vehicle being designed to follow along with an infantry squad and carry up to 1,000 pounds of gear.

The SMET is basically a four-wheel cart that will roll autonomously without a driver, carrying food, water, batteries and equipment for a squad, in order to reduce the weight in Soldier rucksacks, explained Lt. Gen. John M. Murray, the Army's deputy chief of staff, G-8.

He said the Army is working with industry and attempting to lower the estimated production cost of the SMET.

### LIGHTENING ARMORED VEHICLES

Personal protective equipment is not the only armor that needs to be lightened, Murray said. The problem with upgrading armor on vehicles is that it increases their weight, he said.

"The next upgrade of the Abrams (tank) will once again increase the weight," he said. "We're just about reaching the limit of what we can do with the Abrams. So it is time for us to start looking for a next-generation tank."

*The Advanced Combat Helmet Generation II looks almost identical to the ACH Soldiers have been wearing for 15 years, but it weighs 9 ounces to almost a pound less than the legacy helmet. The new helmet is made from ultra-high-molecular-weight polyethylene, a lighter material than Kevlar, but reportedly just as strong.*



"For the very near term, the Abrams is still at the top of its class," Murray said, but added there is parity out there, with other countries now fielding tanks that can compete on the battlefield.

Armored vehicles like the M1 Abrams tank and M2 Bradley are expensive to replace, so in the meantime, incremental upgrades must continue, Murray said. At the same time, new technologies must be explored for a next-generation vehicle. What he said must be found is a new technology that can significantly lighten armored vehicles, but provide the same level of protection.

"We must do both," said Maj. Gen. Robert M. Dyess Jr. about upgrades and new development. Dyess is the acting director of the Army Capabilities Integration Center.

"There is an urgent need to modernize existing equipment," he said, "and undertake developmental programs to replace the workhorses that have provided overmatch and have served our nation so well."

(Follow Gary Sheftick on Twitter: @SheftickARNEWS)



# D-DAY

**JUNE 6, 1944**

